

REMARKS/ARGUMENTS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1, 2 and 4-9 are pending in this application. No claim amendments are presented, thus, no new matter is added.

In the Office Action, Claims 1, 2, and 5-7 were rejected under 35 U.S.C. § 103(a) as unpatentable over Segura et al. (U.S. Pat. 6,360,076, herein Segura) in view of Lauterbach et al. (U.S. Pub. 2003/0162512, herein Lauterbach); and Claims 4 and 8-9 were rejected under 35 U.S.C. § 103(a) as unpatentable over Segura in view of Lauterbach and Miyoshi et al. (U.S. Pub. 2002/0123349, herein Miyoshi).

In the Office Action, Claims 1, 2, and 5-7 were rejected under 35 U.S.C. § 103(a) as unpatentable over Segura in view of Lauterbach. Applicants respectfully traverse this rejection, as independent Claims 1, 2 and 7 recite novel features clearly not taught or rendered obvious by the applied references.

Independent Claim 1 relates to a mobile communication system which carries out multicast communication by a radio station and a plurality of mobile stations belonging to a specific multicast group. Each of the plurality of mobile stations comprises a communication quality measurer configured to measure a communication quality of a signal transmitted from the radio station. The radio station is configured to:

...acquire the communication quality from each of the plurality of mobile stations belonging to the specific multicast group;

...determine a number of transmission signal repetitions by the multicast communication, ***in accordance with the acquired communication quality***;

...***select the lowest communication quality*** from among the acquired communication qualities, and

...determine the number of transmission signal repetitions in accordance with the selected lowest communication quality.

Independent Claims 2 and 7, while directed to alternative embodiments, recite similar features. Accordingly, the remarks and arguments presented below are applicable to each of independent Claims 1, 2 and 7.

The Office Action cites Segura as disclosing Applicants' invention with the exception of "determining a number of transmission signal repetitions by the multicast communication, in accordance with the acquired communication quality" and "transmitting the signal to the plurality of mobile stations using determined number of transmission signal repetitions." In an attempt to cure these deficiencies, the Office Action relies on Lauterbach and asserts that it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the cited references to arrive at Applicant's claims. Applicants respectfully traverse this rejection as neither Segura nor Lauterbach disclose the features for which each is relied upon under 35 U.S.C. § 103.

Segura, the primary reference, relates to a method and a radio telecommunications network of broadcasting data in an over-the-air multicast to a group of mobile terminals.¹ Segura's method uses statistical data indicating the optimal signal quality that users normally experience when operating in a cell. From this data, a minimum transmission quality (TQmin) that a mobile terminal must receive for the type of data being broadcast is determined; the mobile station then broadcasts a test transmission to the mobile terminals, and includes a maximum transmission quality (TQmax) in order to limit the number of responses. A response is then received from a mobile terminal representative of the group, the response including an indication of the received transmission quality.

Segura, however, fails to teach or disclose that the base station "***selects the lowest communication quality from among the acquired communication qualities***," as recited in Claim 1.

¹ Segura, Abstract.

In rebutting the previously presented arguments regarding this feature, the Office Action relies on the steps shown in Fig. 3 of Segura and asserts that the reference “teaches of a method of determining transmission quality, TQmin, that a mobile terminal must receive for the type of data being broadcast, broadcasting a test transmission to the mobile terminals, and receiving responses (received transmission quality) from the mobile terminals and determines whether the received transmission quality is greater or equal to TQmin by following the steps 36-37, 41-43 (Fig. 3) and if the received transmission quality is less than TQmin, it adjusts the received transmission quality by decreasing TQmin.” Thus, as asserted in the Office Action, Segura describes a process for determining a minimum transmission quality for a given communication, but fails to disclose that this minimum transmission quality is *selected from among communication qualities acquired from each of the mobile stations*, as required in independent Claim 1.

More specifically, Fig. 3 and col. 6, ll. 52-65 of Segura describes that the base station 10 receives a response with the reported tq and mobile terminal class. It is then determined whether or not the reported tq is greater than or equal to TQmin. If not, it is determined whether or not the response timer has expired. If not, the base station continues to receive responses from the mobile terminals. If the response timer expires, then there were no mobile terminals which were receiving the transmission with a tq greater than or equal to TQmin. Therefore, TQmin is decreased, and the process starts again. Thus, Segura describes that TQmin is decreased not based on *communication qualities acquired from each of the mobile stations*, but instead that TQmin is arbitrarily decreased when no responses are received from the mobile stations.

Therefore, Segura fails to teach or suggest that the base station “*selects the lowest communication quality from among the acquired communication qualities*,” as recited in Claim 1.

Turning to the applied secondary reference, Lauterbach describes a technique for controlling a transmission parameter of broadcast signals, in accordance with a reception quality.² More particularly, Lauterbach describes that his method includes determining the repetition rate of packets depending on the transfer quality, and broadcasting signals using the determined repetition rate.³

As an initial matter, Lauterbach describes the transmission of radio broadcast signals, but fails to disclose performing multicast communication with a plurality of mobile stations which belong to a specific multicast group, as recited in independent Claim 1.

Further, as described at paragraphs [0038]-[0040] of Lauterbach, the transfer quality is based on a general detection of the communication quality of the broadcast signal, and is not equivalent to “*the lowest communication quality*” from among the communication qualities acquired from each of the plurality of mobile stations belonging to *the specific multicast group*” as recited in independent Claim 1. Further, modifying a “repetition rate of packets” of Lauterbach is not equivalent to determining “*a number of transmission signal repetitions by the multicast communication*” as recited in independent Claim 1.

Therefore, Segura and Lauterbach, neither alone, nor in combination, teach or suggest the features of “determine[ing] a number of transmission signal repetitions by the multicast communication, *in accordance with the acquired communication quality; ...select[ing] the lowest communication quality* from among the acquired communication qualities, and ...determin[ing] the number of transmission signal repetitions by the multicast communication in accordance with the selected lowest communication quality,” as recited in independent Claim 1.

Accordingly, Applicants respectfully request that the rejection of Claim 1 under 35 U.S.C. § 103 be withdrawn. For substantially similar reasons, it is also submitted that

² Lauterbach, Abstract.

³ Id., paragraph [0012].

independent Claims 2 and 7 (and the claims that depend therefrom) patentably define over Segura and Lauterbach.

Claims 4 and 8-9 were rejected under 35 U.S.C. §103(a) as unpatentable over Segura in view of Lauterbach and Miyoshi. Applicants respectfully traverse this rejection, as independent Claims 4, 8 and 9 recite novel features clearly not taught or rendered obvious by the applied references.

Claim 4 is directed to a radio station for carrying out multicast communication with a plurality of mobile stations belonging to a specific multicast group. The radio station is configured to:

...acquire... a communication quality of a signal transmitted *from the radio station to each of the plurality of mobile stations*;

...calculate *an average value* of the communication qualities acquired from the plurality of mobile stations, and

...determine *the number of transmission signal repetitions in accordance with a difference between the calculated average value and a preset reference value*.

Claims 8 and 9, while directed to alternative embodiments, recite substantially similar features. Accordingly, the remarks and arguments presented below are applicable to each of Claims 4, 8 and 9.

The Office Action cites Segura and Lauterbach as disclosing Applicants' invention with the exception of the features directed to calculating an average value of the communication qualities acquired from the plurality of mobile stations, and changing the transmission method (i.e., number of transmission repetitions) in accordance with a difference between the calculated average value and a preset reference value. In an attempt to cure these deficiencies, the outstanding Office Action relies on Miyoshi and asserts that it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the cited references to arrive at Applicant's claims. Applicants respectfully traverse this rejection as Miyoshi fails to teach or suggest the claimed features for which it is asserted

as a secondary reference under 35 U.S.C. § 103. Further, the remarks presented above regarding Segura and Lauterbach, are applicable for similar features for which they are relied upon to reject Claims 4 and 8-9.

Miyoshi, the newly applied secondary reference, describes a base station apparatus for controlling the downlink transmission power value of transmitted signals. More specifically, Miyoshi describes that the base station apparatus calculates the average value of data rate control (DRC) values in each communication terminal apparatus controlled by the base station apparatus.⁴ Miyoshi further describes that the base station determines the transmission power value in accordance with a comparison between the calculated average value of DRC values and a predetermined threshold value.⁵

As an initial matter, Applicants note that Miyoshi fails to disclose that his system performs multicast communication, whatsoever, much less that his system performs multicast communication with a plurality of mobile stations belonging to the specific multicast group, as recited in independent Claim 4.

Therefore, the “average value of DRC values” of Miyoshi is not equivalent to the feature of “*an average value of the communication qualities acquired from the plurality of the mobile stations belonging to the specific multicast group,*” as recited in independent Claim 4. Further, DRC value in Miyoshi merely relates to an acceptable reception data rate for the communication terminal and is not a report of downlink communication quality.

Further, as described above, Lauterbach fails to disclose a feature of “*determin[ing] the number of transmission signal repetitions by the multicast communication,*” which is also a feature required by independent Claim 4.

Therefore, Segura, Lauterbach and Miyoshi, neither alone, nor in combination, teach or suggest a radio station is configured to “acquire... a communication quality of a signal

⁴ Miyoshi, paragraph [0212].

⁵ Id., ST1901 in Fig. 20 and paragraph [0214].

transmitted *from the radio station to each of the plurality of mobile stations... calculate an average value of the communication qualities acquired from the plurality of mobile stations*, and...determine the number of transmission signal repetitions *in accordance with a difference between the calculated average value and a preset reference value*,” as recited in independent Claim 4.

Accordingly, Applicants respectfully request that the rejection of Claim 4 under 35 U.S.C. § 103 be withdrawn. For substantially similar reasons, it is also submitted that independent Claims 8 and 9 patentably define over Segura, Lauterbach and Miyoshi.

Consequently, for the reasons discussed in detail above, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal allowance. Therefore, a Notice of Allowance is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact the undersigned representative at the below listed telephone number.

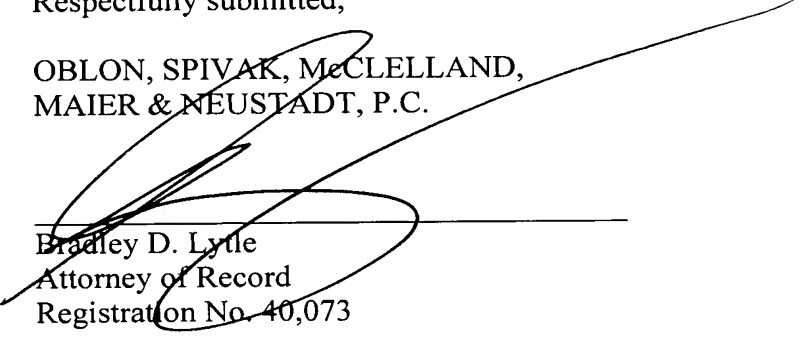
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